UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,865	04/10/2001	Mark T. Corl	8736.134.00	6950

30827 7590 04/02/2008

MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER	
SALTARELLI, DOMINIC D	
ART UNIT	PAPER NUMBER
2623	
MAIL DATE	DELIVERY MODE
04/02/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/828,865	CORL, MARK T.	
	Examiner	Art Unit	
	DOMINIC D. SALTARELLI	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6,9 and 11-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,6,9 and 11-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 3, 2008 have been fully considered but they are not persuasive.

First, regarding the application of the 112 first paragraph rejection of claims 1, 4, 6, 9, and 11-27, the applicant states the examiner is reading the specification too narrowly, and argues the specification provides support that the inventors, at the time the specification was filed, had possession of the claimed invention, stating the purpose of the invention was to use the disclosed invention to insert tables based on degree of probably interest to the viewer. Specifically, applicant states:

> "For instance, the Office relies on page 2, lines 20-24 of the specification to argue that the specification discloses that non-governed tables of the A/65 standard are set at non-uniform intervals. However, this passage is taken out of context. Because the following passage at page 2, lines 24-27 states that the non-uniform issuance intervals are determined as a function of at least one of an amount of time in the future to which the table corresponds and a degree of probable interest to the viewer." (applicant's remarks, pages 2-3).

Applicant further states the use of non-uniform tables was merely exemplary, used as a non-limiting example:

> "The Office, during the interview, argued that page 8, lines 6-10, supports the allegation that the claimed invention is about setting tables at non-uniform intervals. On the contrary, the specification is clear that the described embodiment is merely a non-limiting example. See page 6, lines 17-18 of the specification. Moreover, nowhere does the specification mention that the ETTs must be transmitted at non-uniform intervals. The Office is respectfully requested to point this passage out if the Office believes that the specification explicitly discloses this."(applicant's remarks, page 3)

The applicant concludes by stating the non-uniform issuance intervals could be set to uniform issuance intervals by simply inserting a value of zero for the increment time (applicant's remarks, page 3).

In response, the examiner must note that the setting of non-uniform issuance intervals is both the spirit and scope of the invention. The problem to be solved is one of efficient bandwidth management (applicant's specification, para. 0007), and the field of the invention states explicitly that the invention is directed particularly to the non-uniform issuance of certain tables (applicant's specification, para. 0002). Further, regarding applicant's assertion that the examiner took page 2, lines 20-24 of the specification out of context, it must be noted that if a zero value is input as the increment time, as suggested by applicant on pages 3-4, the non-uniform issuance interval calculated would no longer be non-uniform, which would defeat the purpose of calling it a "non-uniform issuance interval" in the first place.

Further, the specification is not clear that the setting of non-uniform issuance intervals is a non-limiting example as asserted by applicant. Page 6, lines 17-18 of the specification points to the GUI displayed to a user which lists the fields that a user fills in with values to calculate the issuance intervals. While it is conceivable that a user could simply input any arbitrary value in any of the fields, zero or otherwise, there are many combinations of values which would have no relation to the disclosed invention. For example, a user could enter in a

value of zero for all of the fields and never send any tables out, or the user could enter in a value of zero for both the EIT and ETT increment fields and send both tables out with uniform issuance intervals, or the user could further set a shorter interval for ETTs than EITs, contrary to applicant's assertions that EITs should be sent more often. The applicant is no more entitled to a patent on any of these combinations than the proposed setting of EITs at non-uniform issuance intervals and ETTs at uniform issuance intervals.

Lastly, the only indication that the specification resorts to using a non-limiting example is found in paragraph 0031, which states:

> "The non-uniform interval calculation unit 106 can receive the values in the boxes 216, 218, 220, 222 and 224 from the regions 208 and 214, respectively, and use them to determine the **non-uniform** issuance intervals of, e.g., the EIT and ETT tables. Further discussion of the operation of the unit 106 is couched in a particular non-limiting example, for simplicity."

There is simply no indication anywhere in the specification that the invention is anything but a method for calculating specifically non-uniform issuance intervals for PSIP tables.

Next, applicant argues that the Arsenault, Ogawa, and Rasson references teach non-uniform and uniform transmission intervals, respectively, but do not specify the EIT and ETT tables in particular as claimed, and thus both do not teach the claimed invention and are impermissible to combine (applicant's remarks, pages 5-6).

In response, the ATSC standard specifies that EPG data, as a whole, is a collective series of tables (see fig. 5.1 of the ATSC standard). When the teachings of non-uniform transmission of EPG data is applied to this standard (as taught by Arsenault), it is understood based on the disclosure of the prior art that EPG data is simply a collection of tables, and thus the non-uniform transmission is applicable to tables of content. Similarly, as teaching of uniform transmission of EPG data is applicable specifically to tables of content (as taught by Ogawa, who refers to EITs merely as an example). Lastly, a teaching of sending some data types more often as a matter of priority (as taught by Rasson) is also applicable specifically to tables of content. A combination of the ATSC specification with Aresenault, Ogawa, and Rasson is merely the combination of prior art elements according to known methods to yield predictable results. The combination continues to perform the very same function of delivering program guide information as before, and the results of the combination of entirely predictable, given that assigning different transmission intervals to different tables (as supported by the ATSC specification), merely results in differing delivery times for said tables.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 6, and 11-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 21, 22, and 26 of copending Application No. 11/075,928. Although the conflicting claims are not identical, they are not patentably distinct from each.

Claim 1 of 09/828,865, lines 1-5:

"For a digital television packet stream having a plurality of different types of tables, a method to optimize a bandwidth usage of a data stream and to determine issuance intervals for a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) that are inserted in the data stream"

correspond to claim 21, lines 1-3 of 11/075,928:

"A method to optimize a bandwidth of a digital television (DTV) packet stream and to determine transmission cycles for tables to be transmitted as part of the DTV packet stream"

Claim 1 of 09/828,865, lines 5-15:

"wherein the EITs are assigned to cover different ranges of broadcasting time, and an issuance interval for an EIT is a period at which the corresponding EIT is issued, the method comprising: setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future; setting a uniform issuance interval for ETTs to be transmitted in sequence, wherein the ETTs contain program description information associated with the EITs respectively"

correspond to claim 21, lines 4-9 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span; setting a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program description information associated with the EITs"

Claim 1 of 09/828,865, lines 16-20:

"inserting the EITs at the non-uniform issuance intervals, respectively, into the data stream; and inserting the ETTs at the uniform issuance intervals, respectively, into

the data stream, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time."

correspond to claim 21, lines 10-13 of 11/075,928:

"inserting the EITs inot the DTV packet stream at the non-uniform transmission cycles, respectively, and inserting the ETTs into the DTV packet stream at the uniform transmission cycle"

Claim 6 of 09/828,865, lines 1-5:

"A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital system packet stream and to insert a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the digital system packet stream"

correspond to claim 26, lines 1-4 of 11/075,928:

"A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital television (DTV) packet stream and to generate tables to be transmitted as part of the DTV packet stream"

Claim 6 of 09/828,865, lines 6-18:

"an interface to supply issuance-interval setting information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the corresponding EIT is issued, and the issuance interval setting information is an assigned of each of the EITs

to cover one of different ranges of broadcasting time; an interval determination unit to determine non-uniform issuance intervals respectively for the EITs, based upon the issuance interval setting information, and to determine a uniform issuance interval for the plurality of ETTs to be transmitted in sequence, the ETTs containing program description information associated with the EITs respectively, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearing a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future"

correspond to claim 26, lines 5-11 of 11/075,928:

"a transmission cycle determination unit to set non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans such that the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT coving a later time span, wherein the transmission cycle determination unit further sets a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program information associated with the EITs"

Claim 6 of 09/828,865, lines 19-22:

"wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into the digital system packet stream, wherein the uniform inssuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time"

correspond to claim 26, lines 12-16 of 11/075,928:

"a table insertion unit to insert the EITs into the DTV packet stream at the non-uniform transmission cycles, respectively, and to insert the ETTs inot the DTV packet stream at the uniform transmission cycle"

Regarding claim 11 of 09/828,865, lines 1-2:

"The PSIP generator of claim 6, wherein said PSIP generator is embodied in the form of a processor running software." is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 12 of 09/828,865, lines 1-2:

"The PSIP generator of claim 11, wherein said software is written in the computer language Java" is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 13 of 09/828,865, lines 1-3:

"A processor readable article of manufacture having embodied thereon software comprising a plurality of code segments to perform the method of claim 1." is an obvious variation over the method disclosed in claim 21, lines 1-2, of 11/075,928.

Regarding claim 14 of 09/828,865, lines 1-4:

"A processor-readable article of manufacture having embodied thereon software comprising a plurality of code segments to cause a processor to perform the functional aspects of the program and system information protocol (PSIP) generator of claim 6." is an obvious variation over the PSIP generator disclosed in claim 26, lines 1-2, of 11/075,928.

Regarding claim 15 of 09/828,865, this claim directly corresponds to claim 22 of 11/075,928.

Regarding claim 16 of 09/828,865:

"The method of claim 15, wherein in the setting step, the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases"

correspond to claim 21, lines 4-7 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span"

Regarding claim 17 of 09/828,865, this claim corresponds to claim 22 of 11/075,928.

Regarding claim 18 of 09/828,865:

"The PSIP generator of claim 17, wherein the non-uniform interval determination unit determines to increase the issuance intervals respectively for EIT-0, EIT-1, and EIT-2 as the table number increases."

corresponds to claim 21, lines 4-7 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span"

Regarding claim 19 of 09/828,865, each of the claim limitations of claim 1 are found therein, and includes a further limitation of the groups of EITs and ETTs include EIT-0, EIT-1, EIT-2 and ETT-0, ETT-1, ETT-2, respectively, wherein the transmission cycles of the group of EITs are non-uniform with respect to each other based on closeness in coverage time to which each EIT in the group of EITs is assigned, to a current broadcasting time (claim 19, lines 3, 5-7, and 13).

This corresponds to claim 22 of 11/075,928, which also discloses including tables 0 through 2 for the EIT group, rendering inclusion of tables 0 through 2 for the ETTs as an obvious variation as well, and claim 22 depends from claim 21, which states "the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an IET covering a later time span" (lines 5-7).

Regarding claim 20 of 09/828,865:

"The method of claim 19, wherein in the setting step, the transmission cycles are set respectively for EIT-0, EIT-1, and EIT-2 in the group of EITs to increase as the EIT table number increases."

correspond to claim 21, lines 4-7 of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span"

Regarding claims 21 and 26 of 09/828,865, each of the claim limitations of claim 19 are present in claims 21 and 26, and thus similarly correspond to claims 21 and 22 of 11/075,928.

Regarding claims 22-25 and 27, each of the claim limitations of claim 19 are present in claims 22-25 and 27, and further the limitations:

transmission/issuance interval for EIT_{i-1} < transmission/issuance interval for EIT_i for i = 1 and 2

transmission/issuance interval for ETT_{i-1} = transmission/issuance interval for ETT_i for i = 1 and 2

correspond to the non uniform transmission cycles for EITs and uniform transmission cycle for ETTs described in claim 21, lines 4-9, of 11/075,928:

"setting non-uniform transmission cycles for a sequence of event information tables (EITs) containing program information covering different time spans, wherein the transmission cycle for an EIT covering an earlier time span is set narrower than the transmission cycle for an EIT covering a later time span; setting a uniform transmission cycle for a sequence of extended text tables (ETTs) containing program description information associated with the EITs"

4. Claims 1 and 6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 8 of copending Application No. 11/075,944. Although the conflicting claims are not identical, they are not patentably distinct from each.

Claim 1 of 09/828,865, lines 1-5:

"For a digital television packet stream having a plurality of different types of tables, a method to optimize a bandwidth usage of a data stream and to determine issuance intervals for a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) that are inserted in the data stream"

correspond to claim 8, lines 1-3 of 11/075,944:

A method for optimizing bandwidth usage of data stream and for inserting a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the data stream in a broadcast environment"

Claim 1 of 09/828,865, lines 5-15:

"wherein the EITs are assigned to cover different ranges of broadcasting time, and an issuance interval for an EIT is a period at which the corresponding EIT is issued, the method comprising: setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future; setting a uniform issuance interval for ETTs to be transmitted in sequence, wherein the ETTs contain program description information associated with the EITs respectively"

correspond to claim 8, lines 4-10 of 11/075,944:

"setting a first transmission interval for a first group of EITs containing program information covering a first broadcast time, and a second transmission interval for a second group of EITs containing program information covering a second broadcast time after the first broadcast time; setting a uniform transmission interval for a first group of extended text tables (ETTs) containing program description information associated with the first group of EITs and for a second group of ETTs containing program description information associated with the second group of EITs"

Claim 1 of 09/828,865, lines 16-20:

"inserting the EITs at the non-uniform issuance intervals, respectively, into the data stream; and inserting the ETTs at the uniform issuance intervals, respectively, into

the data stream, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time"

correspond to claim 8, lines 11-18 of 11/075,944:

"generating the first and second groups of EITs; generating the first and second groups of ETTs; inserting the first and second groups of EITs into the data stream, wherein the first group of EITs are inserted into the data stream more frequently than the second group of EITs based on the first and second transmission intervals; and inserting the first and second groups of ETTs into the data stream at the uniform transmission interval"

Claim 6 of 09/828,865, lines 1-5:

"A program and system information protocol (PSIP) generator to optimize a bandwidth of a digital system packet stream and to insert a plurality of event information tables (EITs) and a plurality of extended text tables (ETTs) into the digital system packet stream"

correspond to claim 1, lines 1-4 of 11/075,944:

"An apparatus that optimizes bandwidth usage of a data stream and for inserting a plurality of event information tables (EITs) and a plurality of extended text tables inot the data stream in a broadcast environment"

Claim 6 of 09/828,865, lines 6-18:

"an interface to supply issuance-interval setting information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the corresponding EIT is issued, and the issuance interval setting information is an assigned of each of the EITs to cover one of different ranges of broadcasting time; an interval determination unit to determine non-uniform issuance intervals respectively for the EITs, based upon the issuance interval setting information, and to determine a uniform issuance interval for the plurality of ETTs to be transmitted in sequence, the ETTs containing program description information associated with the EITs respectively, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearing a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future"

correspond to claim 1, lines 5-12 of 11/075,944:

"a generator to set a first transmission interval for a first group of EITs containing program information covering a first broadcast time, and a second transmission interval for a second group of EITs containing program information covering a second broadcast time after the first broadcast time and to generate the first and second groups of EITs, wherein the generator is further configured to set a uniform transmission interval for a first group of ETTs containing program description associated with the first group of EITs and for a second group of ETTs containing program description associated with the second group of EITs, and to generate the first and second groups of ETTs"

Claim 6 of 09/828,865, lines 19-22:

"wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into the digital system packet stream, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time"

correspond to claim 1, lines 13-18 of 11/075,944:

"wherein the generator inserts the first group of EITs inot the data stream more frequently than the second group of EITs based on the fist and second transmission intervals, and wherein the generator inserts the first group of ETTs and the second group of ETTs into the data stream at the uniform transmission interval"

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 4, 6, 9, and 11-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Regarding independent claims 1, 4, 6, 9, 19, and 21-27, each of these claims includes the limitation of setting a uniform issuance interval for ETTs. However, the originally filed specification does not support setting uniform issuance intervals for "non-governed tables". In fact, the entire disclosure specifically teaches away from setting uniform issuance intervals for ETTs, as the purpose of the invention is to set non-uniform issuance intervals for both EITs and ETTs in order to manage bandwidth. Page 6, lines 11-18 state that the issuance intervals for ETTs are set to be non-uniform in precisely the same manner as EITs. Also see page 2, lines 20-24, page 3, lines 3-19, and page 8, line 5.

Regarding dependent claims 11-18 and 20, each are rejected under 112 first paragraph for being dependent upon a claim rejected under 112 first paragraph.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 6, and 11-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Program Guide for Digital Television ATSC Standard A/65

[ATSC] in view of Arsenault et al. (6,658,661, of record) [Arsenault], Ogawa et al. (6,314,571) [Ogawa], and Rasson et al. (6,137,549) [Rasson].

Regarding claims 1 and 13, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose optimizing bandwidth usage of a data stream by setting the issuance intervals for the EITs, respectively, to be non-uniform based on the range of broadcasting time which each of the EITs is assigned to cover, wherein among the EITs, the issuance interval for an EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for an EIT covering a range of broadcasting time further in the future and setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Arsenault teaches setting the issuance intervals for program guide data, respectively, to be non-uniform based on the range of

broadcasting time which the program guide data is assigned to cover, wherein the issuance interval for program guide data covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for program guide data covering a range of broadcasting time further in the future (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing the bandwidth usage of a data stream (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC to include setting the issuance intervals for program guide data, respectively, to be non-uniform based on the range of broadcasting time which the program guide data is assigned to cover, wherein the issuance interval for program guide data covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for program guide data covering a range of broadcasting time further in the future, as taught by Arsenault, wherein program guide data is described in EITs, providing the benefit of more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Ogawa teaches sending PSIP table data at periodic intervals, maintaining current records of said data at a receiver (col. 20, lines 24-50).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Ogawa, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

ATSC, Arsenault, and Ogawa fail to disclose the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Rasson teaches setting the transmission periods for program guide tables such that issuance intervals for lower priority data is set to be greater than the issuance intervals for higher priority data, ensuring that more critical data is given bandwidth preference (col. 6, lines 1-27).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC, Arsenault, and Ogawa to include setting the transmission periods for program guide tables (EITs and ETTs) such that issuance intervals for lower priority data (ETT, identified as 'optional' by the PSIP specification) is set to be greater than the issuance intervals for higher priority data (EITs are mandatory, and EITs closest the nearest time are the most critical), ensuring that the more critical data is given bandwidth preference.

Regarding claims 6 and 14, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine

issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose a program and system information generator to optimize a bandwidth of a digital television system packet stream and to insert a plurality of EITs and a plurality of ETTs into the digital system packet stream, the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for the plurality of EITs to be transmitted in sequence, wherein an issuance interval for an EIT is a period at which the correspond EIT is issued, and the issuance-interval setting information is an assignment of each of the EITs to cover one of different ranges of broadcasting time; and

an interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval setting information, and to determine a uniform issuance interval for a plurality of ETTs to be transmitted in sequence,

wherein among the EITs, the issuance interval for a EIT covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for a EIT covering a range of broadcasting time further in the future; and

wherein the generator inserts the EITs at the non-uniform issuance intervals and the ETTs at the uniform issuance interval determined by the interval determination unit into he digital system packet stream, wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Arsenault discloses a program and system information generator to generate tables for a digital television system packet stream (transmission station 14 shown in fig. 1 is the generator generating the stream shown in fig. 5), the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence (the means that determines the timing of the carousels shown in fig. 5, col. 7, lines 23-30), wherein an issuance interval for a table is a period at which the correspond table is issued, and the issuance-interval setting information is an assignment of each of the tables to cover one of different ranges of broadcasting time (col. 7, lines 43-49); and

a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval

setting information (the means that actually sets the timing information disclosed in col. 7, lines 43-49 for creating the stream shown in fig. 5),

wherein among the tables, the issuance interval for a table covering a range of broadcasting time nearer a current time is set to be less than the issuance interval for a table covering a range of broadcasting time further in the future (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing bandwidth usage (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify ATSC to include a program and system information generator to generate tables for a digital television system packet stream, the generator comprising:

an interface to supply issuance-interval information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence, wherein an issuance interval for a table is a period at which the correspond table is issued, and the issuance-interval setting information is an assignment of each of the tables to cover one of different ranges of broadcasting time; and

a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-interval setting information,

wherein among the tables, the issuance interval for a table covering a range of broadcasting time nearer a current time is set to be less than the

issuance interval for a table covering a range of broadcasting time further in the future, as taught by Arsenault, wherein the tables of program guide data are EITs as disclosed by ATSC, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose determining a uniform issuance interval for a plurality of ETTs to be transmitted in sequence and wherein the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Ogawa teaches sending PSIP table data at periodic intervals, maintaining current records of said data at a receiver (col. 20, lines 24-50).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Ogawa, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

ATSC, Arsenault, and Ogawa fail to disclose the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Rasson teaches setting the transmission periods for program guide tables such that issuance intervals for lower priority data is set to

be greater than the issuance intervals for higher priority data, ensuring that more critical data is given bandwidth preference (col. 6, lines 1-27).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC, Arsenault, and Ogawa to include setting the transmission periods for program guide tables (EITs and ETTs) such that issuance intervals for lower priority data (ETT, identified as 'optional' by the PSIP specification) is set to be greater than the issuance intervals for higher priority data (EITs are mandatory, and EITs closest the nearest time are the most critical), ensuring that the more critical data is given bandwidth preference.

Regarding claim 11, ATSC, Arsenault, Ogawa, and Rasson disclose the generator of claim 6, wherein said PSIP generator is embodied in the form of a processor running software (the generator is a digital computer system for receiving, generating, multiplexing, and broadcasting digital data streams, including the electronic program guide data, Arsenault, col. 5, lines 19-41).

Regarding claim 12, ATSC, Arsenault, Ogawa, and Rasson disclose the generator of claim 11, but fail to disclose said software is writing in the computer language Java.

Using the computer language Java is notoriously well known in the art, as the Java language has the advantages of being a portable, cross-platform, object oriented software language.

Therefore, it would have been obvious at the time to a person of ordinary skill in the art to modify the generator of ATSC, Arsenault, and Waldroup to include said software is written in the computer language java, for the benefits of using a software language that is object oriented, portable, and platform independent, which simplifies the design and implementation of said software.

Regarding claims 15 and 17, ATSC, Arsenault, Ogawa, and Rasson disclose the method and generator of claims 1 and 6, wherein the EITs include EIT-0, EIT-1, and EIT-2 (as shown in fig. 5.1 in ATSC).

Regarding claims 16 and 18, ATSC, Arsenault, Ogawa, and Rasson disclose the method and generator of claims 15 and 17, wherein the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases (Arsenault, col. 7, lines 55-59).

Regarding claims 19 and 21-27, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) to be transmitted in sequence (pages 12 and 45, including EIT-0, EIT-1, and EIT-2,

see fig. 5.1), wherein the EIT are assigned to cover different ranges of broadcasting time (page 30), and an issuance interval for an EIT is a period at which the corresponding EIT is issued. ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33, including ETT-0, ETT-1, and ETT-2, see fig. 5.2).

ATSC fails to disclose a method and program and system information generator for determining transmission cycles of a group of EITs to optimize a bandwidth of a data stream, the method comprising:

setting the transmission cycles of the groups of EITs to be non-uniform with respect to each other, based on closeness in coverage time to which each EIT in the group is assigned, to a current broadcasting time, wherein among the group of EITs, the transmission cycle of an EIT assigned to a coverage time nearer the current time is set to be less than the transmission cycle of an EIT assigned to a coverage time further in the future from the current broadcasting time; and setting a uniform transmission cycle of a group of ETTs, wherein the uniform transmission cycle is set greater than the transmission cycle set for EIT-0.

Arsenault discloses a method and program and system information generator (transmission station 14 shown in fig. 1 is the generator generating the stream shown in fig. 5) for determining transmission cycles of a group of tables (fig. 5), the method comprising:

setting the transmission cycles of the groups of tables to be non-uniforms with respect to each other, based on closeness in coverage time to which each table in the group is assigned, to a current broadcasting time, wherein among the group of tables, the transmission cycle of a table assigned to a coverage time nearer the current time is set to be less than the transmission cycle of a table assigned to a coverage time further in the future from the current broadcasting time (col. 7, lines 23-67), providing more efficient broadcasting of program guide data, optimizing bandwidth usage (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify ATSC to include a method and program and system information generator for determining transmission cycles of a group of tables, the method comprising setting the transmission cycles of the groups of tables to be non-uniforms with respect to each other, based on closeness in coverage time to which each table in the group is assigned, to a current broadcasting time, wherein among the group of tables, the transmission cycle of a table assigned to a coverage time nearer the current time is set to be less than the transmission cycle of a table assigned to a coverage time further in the future from the current broadcasting time, as taught by Arsenault, wherein the tables of program guide data are EITs as disclosed by ATSC, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform transmission cycle of a group of ETTs, wherein the uniform transmission cycle is set greater than the transmission cycle set for EIT-0.

In an analogous art, Ogawa teaches sending PSIP table data at periodic intervals, maintaining current records of said data at a receiver (col. 20, lines 24-50).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Ogawa, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

ATSC, Arsenault, and Ogawa fail to disclose the uniform issuance interval set for the ETTs is greater than an issuance interval set for an EIT nearest to the current time.

In an analogous art, Rasson teaches setting the transmission periods for program guide tables such that issuance intervals for lower priority data is set to be greater than the issuance intervals for higher priority data, ensuring that more critical data is given bandwidth preference (col. 6, lines 1-27).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC, Arsenault, and Ogawa to include setting the transmission periods for program guide tables (EITs and ETTs) such that issuance intervals for lower priority data (ETT, identified as 'optional' by the

PSIP specification) is set to be greater than the issuance intervals for higher priority data (EITs are mandatory, and EITs closest the nearest time are the most critical), ensuring that the more critical data is given bandwidth preference.

Regarding claims 20, ATSC, Arsenault, Ogawa, and Rasson disclose the method of claim 19, wherein the issuance intervals are set respectively for EIT-0, EIT-1, and EIT-2 to increase as the EIT table number increases (Arsenault, col. 7, lines 55-59).

9. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over ATSC in view of Arsenault and Ogawa.

Regarding claims 4 and 9, ATSC discloses, for a digital television packet stream having a plurality of different types of tables, a method to determine issuance intervals for a plurality of event information tables (EITs) (pages 12 and 45). ATSC further discloses including extended text tables (ETTs), wherein the ETTs contain program description information associated with the EITs respectively (pages 12-13 and 33).

ATSC fails to disclose optimizing bandwidth usage of a data stream by setting the issuance intervals for the EITs, respectively, to be non-uniform, wherein an issuance interval between any two adjacent instances of an i^{th} EIT is determined according to the following equation:

interval(i^{th} EIT) = root_time + (increment_time)*i,

wherein interval(i^{th} EIT) is the interval between any two adjacent instances of the i^{th} EIT, root_time is a predetermined interval for the EIT corresponding most closely in time to the present, increment_time is a non-zero scalar and i is an integer greater than one, and setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Arsenault discloses a program and system information generator to generate tables for a digital television system packet stream (transmission station 14 shown in fig. 1 is the generator generating the stream shown in fig. 5), the generator comprising an interface to supply issuance-setting information required for setting issuance intervals respectively for a plurality of tables to be transmitted in sequence (the means that determines the timing of the carousels shown in fig. 5, col. 7, lines 23-30); and a non-uniform interval determination unit to determine non-uniform issuance intervals respectively for the tables based upon the issuance-setting information (the means that actually sets the timing information disclosed in col. 7, lines 43-49 for creating the stream shown in fig. 5),wherein among the tables, an issuance interval between any two adjacent instances of an i^{th} table (table 0, in the example given, is 0-6 hours of programming from the current time, and table 1 is 6-24 hours of programming from the current time, however this is entirely flexible and at the discretion of the designer, col. 7, lines 55-59) is determined according to the following equation:

interval(i^{th} table) = root_time + (increment_time)*i,

wherein interval(i^{th} table) is the interval between any two adjacent instances of the i^{th} table, root_time is a predetermined interval for the table corresponding most closely in time to the present, increment_time is a non-zero scalar and i is a non-zero integer (as shown in col. 7, lines 40-49, between the 0 and 1 tables, wherein i = 1, the interval for table 1 is 30 minutes and the root_time is 5 minutes, which is the interval for table 0, making the increment_time the non-zero scalar 25, thus satisfying the above equation because 30 = 5 + 25*1). Arsenault further teaches that any number of carousels covering any number of time periods are applicable, and thus application of the above formula for values of 'i' greater than 1 is within the scope of the disclosure and is a sufficiently obvious modification of the example provided (col. 7, lines 55-59). This provides more efficient broadcasting of program guide data, optimizing the bandwidth usage of a data stream (col. 7, lines 23-25).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC to include setting the issuance intervals for program guide data tables, respectively, to be non-uniform, wherein an issuance interval between any two adjacent instances of an i^{th} table is determined according to the following equation:

interval(i^{th} table) = root_time + (increment_time)*i,

wherein interval(i^{th} table) is the interval between any two adjacent instances of the i^{th} talbe, root_time is a predetermined interval for the program guide data corresponding most closely in time to the present, increment_time is a

non-zero integer, as taught by Arsenault, wherein the program guide data tables are EITs, for the benefit of providing more efficient broadcasting of program guide data.

ATSC and Arsenault fail to disclose setting a uniform issuance interval for a plurality of ETTs to be transmitted in sequence.

In an analogous art, Ogawa teaches sending PSIP table data at periodic intervals, maintaining current records of said data at a receiver (col. 20, lines 24-50).

It would have been obvious at the time to a person of ordinary skill in the art to modify the method disclosed by ATSC and Arsenault to send table data at periodic intervals, as taught by Ogawa, wherein the table data are the ETTs disclosed by the ATSC, for the benefit of maintaining current records of said data at a receiver.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOMINIC D. SALTARELLI whose telephone number is (571)272-7302. The examiner can normally be reached on Monday - Friday 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2623

/Dominic D Saltarelli/

Examiner, Art Unit 2623